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AFRICAN BEES OF THE GENUS *NOMIOIDES*

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The present paper relates to the hitherto unreported material of the Cockerell–Mackie–Ogilvie Expedition of 1931–1932. The types of the new species will be found in The American Museum of Natural History. In dealing with this genus, I have necessarily used the excellent papers by Blüthgen (1925, Stettiner Entomologische Zeitung, LXXXVI, 100 pp.; 1933, Mem. Soc. Entomologica Italiana, XII, pp. 114–127; 1934, Stett. Ent. Zeitung, XCV, pp. 238–283). It may be useful to state that the large paper of 1925 was received in Boulder, September 23, 1925.

When dealing with the *Nomioides* fauna of Morocco, I separated some forms, closely related to those already described, but apparently distinct and oligotropic on particular plants, like our American species of *Perdita*. Blüthgen does not accept these conclusions, and there can be no doubt that more information is needed in order to settle the problems involved. Miss Louise M. Ireland (1935, Annals of Transvaal Museum, pp. 95–107) has figured the genitalia of *N. variegata* (Olivier), *N. luderitzi* (Blüthgen) and *N. muiri* Cockerell, and they are different enough to suggest that these are three valid species, though Blüthgen is convinced that the two latter are no more than varieties of *N. variegata*. *N. halictoides vernayi* Cockerell and Ireland, from the Kalahari Desert, is regarded as a subspecies of *N. halictoides* Blüthgen, but even this shows certain minor differences in the genitalia. Thus it seems probable that intensive biological and morphological studies will reveal a very interesting state of affairs, with many closely related or incipient species.

Nomioides (Cellariella) atomella, new species

MALE.—Length hardly over 3 mm., anterior wing 2.7; black, with the markings nearly white. It differs from *N. somalica* Magretti by its minute size; flagellum black above, dusky reddish brown beneath; first tergite entirely black, second and third with broadly interrupted bands, that on second reduced to a pair of elongate marks; hind tibiae with rather more than the apical half black; mandibles black at base, without a yellow spot. The second cubital cell is petiolate above; postscutellum with a light band as in typical form; clypeus yellow (reddened by cyanide in type), without spots; scape with a pale stripe in front.

Belgian Congo: 60 kilometers south of Bukavu, August 28 (Alice Mackie).

Nomioides callonotus, new species

FEMALE.—Length about 4 mm., anterior wing 3.3; head round seen from in front, rather dark bluish green, with rather conspicuous short pale hair; mandibles bright red with dark tip and pale yellow base; labrum pale yellowish; clypeus black, with an obscure apical yellow band, which is connected with a pair of very widely separated short vertical bands; sides of front and face shining; scape broadly light yellow in front; flagellum short, pale testaceous beneath; mesothorax dullish, very brilliant Prussian green; the rest of the thorax obscure bluish green, without light marks, except that the tubercles are margined with yellow; tegulae hyaline; wings perfectly clear, appearing rather milky; stigma hyaline, with a very pale yellowish margin; nervures colorless, marginal cell very narrowly truncate at end; second cubital cell much narrowed above; first recurrent nervure meeting second intercubitus; femora black, with the knees narrowly pale; tibiae and tarsi pale reddish, the tibiae with black marks, minute on first, larger on second, very large on third; abdomen broad, black, first two tergites with rufous hind margins, overlapping basal yellow bands on second and third; third with a whitish margin, overlapping a red band; fourth and fifth with hyaline margins.

Cape Province: Ceres, February 12–18, 1932 (L. Ogilvie). Related to the North African *N. turanica* Morawitz, but distinguished by the clypeal mark, the brilliant green mesothorax, and other characters.

Nomioides fasciata Friese

Sudan: Port Sudan, June, 1932, five males (J. Ogilvie). Easily known from *N. variegata* by the tergites 2 to 6 having yellow bands, and the scutellum and postscutellum more or less marked with yellow.

Nomioides halictoides Blüthgen

Cape Province: George, one female, November (J. Ogilvie); Ceres, one female, February (A. Mackie); Blaukrans, near Calvinia, one male, November (J. Ogilvie).

Nomioides maculiventris (Cameron)

Cape Province: Calvinia, November, two females and a male (J. Ogilvie); Doorn River, November, one female (J. Ogilvie); Van Rhyns Pass, one female, November (W. P. Cockerell); Oudtshoorn, two females, October (Cockerell); Uitenhage, three females, October (A. Mackie); Nieuwoudtville, November, one female (A. Mackie).

In American Museum Novitates, No. 547, I said that the yellow of female scutellum was not at all notched, but on examining a long series, I find it very frequently notched behind. Blüthgen has mentioned this error in Stett. Ent. Zeit., 1934, p. 251, footnote.

Nomioides (Cellariella) somalica Magretti

This very widely distributed species is variable, and may prove to consist of more than one. Specimens now before me separate out as follows:

1.—Male: clypeus pale yellow without black spots; markings of abdomen white; band on second tergite very widely interrupted, reduced to a long pyriform mark on each side; band on third tergite narrowly interrupted, and the other tergites black without bands; mandibles yellow, red at end. Lobito Bay, Angola, July 19–20, 1931 (A. Mackie)..... *somalica* Magretti.
Females..... 2.

2.—Larger, length about 5.5 mm.; mandibles black at base, with only a minute yellow spot; front and middle femora with only the knees yellow; hind tibiae black, with much white hair; median spot on first tergite small; second tergite with a large spot on each side, these connected with a slender band across the base; third tergite with a broad, entire band; the other tergites with narrower bands; clypeus with two black spots. Nata River, Kalahari, August 24–27, 1930 (Van Son, Vernay-Lang Expedition)..... *kalaharica*, n. subsp.
Smaller, length about 4.5 mm.; mandibles yellow at base and red beyond; hind tibiae light yellow, with a large or small black mark..... 3.

3.—Clypeus with two black spots; all the light markings of head, thorax and abdomen very pale, hardly at all yellowish; scutellum entirely black; front and middle femora with light knees; median spot on first tergite a transverse bar; second tergite with the band broadly interrupted, on the other tergites it is entire. Benguela, Angola, July, 1931 (A. Mackie)..... *somalica* Magretti.
Clypeus without black spots; light markings pale yellow; scutellum with a slender interrupted band posteriorly; front and middle femora broadly yellow at apex; median spot on first tergite large; band on second and following tergites broadly entire. Usakos, Southwest Africa, January 16, 1934 (L. Ogilvie)..... *completa* Blüthgen.

All these have the second cubital cell petiolate above; in the Angola specimens the first recurrent nervure meets second intercubitus, but in the Usakos one it joins the third cubital cell.

Nomioides variegata (Olivier)

Sudan: Port Sudan, June, 1932, one male and two females (J. Ogilvie).

Belgian Congo: Uvira, August 28–29, 1931, one female (abdomen lost) and two males (A. Mackie, J. Ogilvie).

Southern Rhodesia: Shangani, De Beers Ranch, May, 1932, one male (J. Ogilvie).

Transvaal: Louis Trichardt, April, 1932, one male (J. Ogilvie).